



## **Colorado Division of Water Resources Dam Safety Branch**

# **Independent Third-Party Review Guidelines**

**Policy Memorandum No. 01-03**

**February 10, 2003**

### **1.0 INTRODUCTION**

Colorado Statutes (C.R.S. 37-87-105) require approval by the State Engineer's Office (SEO) of designs for new dam construction or modifications or improvements to existing dams. The statutes require the SEO to respond within 180 days (C.R.S. 37-87-105) after submittal of engineering documents (construction plans and specifications and engineering reports). Typically, reviews by the SEO Dam Safety Branch have taken 60 to 120 days, although some have taken up to 180 days. As an alternative to the SEO review, dam owners may choose to hire an independent third party to perform the review of these engineering documents to potentially shorten the review duration. Engineering documents reviewed by independent third parties must still be approved by the SEO prior to construction.

### **2.0 PURPOSE**

This policy memorandum sets forth the standards and procedures for requesting and performing an independent third-party review for engineering documents submitted to the SEO as described above. These standards and procedures are intended to establish consistent guidelines, set forth minimum qualifications, and provide an understanding of the proper use of the independent third-party reviews.

Independent third-party reviews may be requested for:

1. Dam designs (designs for new dams or enlargement, alteration, modification, repair, or removal of existing dams),
2. Hydrology studies, and
3. Other studies, as deemed appropriate by the SEO.

The SEO reserves the right to alter the use, procedures, and requirements of the independent third-party review process as necessary to meet the goals of the Dam Safety Branch.

### **3.0 PROCEDURES FOR REQUESTING INDEPENDENT THIRD-PARTY REVIEWS**

#### **3.1 Request**

Dam owners interested in having an independent third-party review performed shall submit their request to the SEO in writing. The dam owner or the owner's designated representative must submit the request. The SEO will not accept a request from any other party. At a minimum, the request must include the following information:

1. The purpose of requesting an independent third-party review.
2. A description of the project, including Project location, description of the dam and appurtenant structures, and other pertinent information.
3. Name(s) of proposed individual(s) responsible for performing the independent third-party review. If proposing more than one individual, the request must provide a breakdown of the roles and areas of review responsibility for each individual.
4. A resume(s) for each proposed independent third-party review team member. Corporate resumes will not be accepted. Each resume shall include information demonstrating the experience and qualifications of each review team member, appropriate to the proposed review project. Each resume shall also include a client reference list with at least three references, including the name, address, and phone number of each reference. References must be dam owners, design engineers, or other regulatory agencies that have direct and personal knowledge of the reviewers' qualifications.
5. A signed affidavit from each proposed independent third-party review individual stating that they:
  - a. Believe that they possess the required knowledge and experience to perform the proposed independent third-party review,
  - b. Will personally conduct the independent review, or that other persons assisting the reviewer will work under the direct and personal supervision of the reviewer,
  - c. Do not have a conflict of interest with the dam owner, the party(ies) responsible for the design or study, or the State of Colorado,
  - d. Are truly independent and do not have prior working knowledge or experience on the project,

- e. Will perform their review in the best interest of the State of Colorado regardless of potential pressures or influences from any other individuals or interested parties, and
  - f. Will participate strictly as an independent reviewer, and will not participate in developing the design or conducting the study.
- 6. A statement acknowledging that the dam owner understands that the fees of the independent third-party reviewer(s) and all other costs associated with the independent review are the responsibility of the dam owner.
  - 7. A statement acknowledging that the conclusions and recommendations of the independent third-party reviewer(s) are not binding on the State and that the SEO maintains the final authority for the approval of all designs, reports, studies, and other engineering documents.
  - 8. A proposed schedule to perform the independent third-party review, including proposed kick-off meeting dates and proposed design summary presentation dates, as discussed below.

Although there is no definitive timing as to when an owner can request an independent third-party review, dam owners are encouraged to submit their request as far in advance as possible to permit the greatest flexibility in reviewing the requests and performing the reviews.

### **3.2 Minimum Qualifications**

The proposed independent third-party reviewer(s) shall have the following minimum qualifications:

- 1. Be a licensed Professional Engineer in Colorado,
- 2. Have a minimum of 10 years of relevant experience in all pertinent aspects of dam design, dam construction, or expertise in an appropriate engineering specialty in the review role served, and
- 3. Have a good working knowledge of the Colorado Rules and Regulations for Dam Safety and Dam Construction.

The SEO may require additional qualifications depending on the technical aspects or unique features of the project.

### **3.3 SEO Review and Approval**

Within 15 days of receipt, the SEO will review the request and inform the dam owner whether the independent third-party review has been approved, denied, or if other information is necessary for processing the request.

The SEO reserves the right to approve or deny independent third-party reviewers.

### **3.4 Confirmation of Intent to Proceed with Independent Third-Party Review**

Upon receipt of the SEO's approval letter, the dam owner shall send a confirmation letter to the SEO stating the dam owner's intention to either (1) proceed with the independent third-party review using the reviewer(s) approved by the SEO for the project; or (2) not to proceed with the independent third-party review process; in which case, the design or study will be reviewed by the SEO in accordance with the Colorado Statutes (C.R.S. 37-87-105).

### **3.5 Fees**

No additional fees are required by the SEO for requesting or performing an independent third-party review. Filing fees, as outlined in Rule 5 and 17 of the Rules and Regulations for Dam Safety and Dam Construction, remain applicable.

## **4.0 PROCEDURES FOR PERFORMING INDEPENDENT THIRD-PARTY REVIEWS**

### **4.1 Standards and Procedures**

The review performed by the independent third-party reviewer(s) shall conform to the same minimum technical standards and processes adhered to by the SEO. The SEO Dam Safety Branch personnel use the following minimum standards and procedures in performing reviews of engineering documents:

1. The Design Checklist and the Project Review Guide to verify that all pertinent aspects of the design have been adequately addressed. These documents are available to the public on the Dam Safety website at <http://water.state.co.us/damsafety/dams.asp>.
2. As necessary, perform independent analyses of critical aspects (including hydrology, slope stability, seepage, hydraulics, and structural design) to confirm the engineer's conclusions and verify the selected design criteria or study recommendations. The scope and appropriate and acceptable methods for performing independent analyses should be discussed with the SEO Dam Safety Branch prior to performing the analyses.

## **4.2 Role of the Independent Third-Party Reviewer(s)**

The independent third-party reviewer(s) role is to provide a review of the engineering documents on the SEO's behalf. Therefore, the reviewer(s) must closely follow the standards and procedures for performing the review as identified in Section 4.1 above. In order to provide these review services, the reviewer(s) must also maintain complete independence throughout the review process.

All parties shall recognize and acknowledge that the reviewers are NOT part of the design or study team. As such, the reviewers shall have limited involvement during the design or study until the final product is produced. The reviewer(s) may be consulted during the design or study to provide preliminary thoughts, opinions, and comments on questionable or critical parts of the design or study. However, the independent third-party reviewer(s) shall not provide a detailed review of the analyses, drawings, specifications, etc. until the final review package or report is submitted.

## **4.3 Reporting Protocols**

Questions, comments, clarifications, etc. by the independent third-party reviewer(s) arising out of their reviews shall first be directed to the SEO design review manager. The independent third-party reviewer may not direct review comments to the individual or company responsible for the design or study until these comments are discussed with the SEO design review manager.

All review-related correspondence issued by the independent third-party reviewer(s) shall be addressed to the SEO design review manager with copies to the other parties, as appropriate.

Official decisions, including acceptance and approval of the design or study, shall be issued by the SEO. The independent third-party reviewer(s) shall not have the authority to accept or approve the design or study.

Submittal of engineering documents for independent third-party review must meet the provisions of the Rules and Regulations for Dam Safety and Dam Construction and shall be addressed to the SEO.

## **4.4 Initial Meeting**

After the SEO approves the independent third-party reviewer(s), an initial meeting shall be held to start the independent third-party review process prior to the reviewer's performance of any substantial work. The independent third-party reviewer, the party responsible for the design or study, the dam owner, and representatives of the SEO all must attend the initial meeting. The dam owner or his duly authorized representative shall coordinate and conduct the initial meeting. As a minimum, the dam owner and/or party responsible for the design or study shall include the presentation and discussion of the following information at the initial meeting:

1. Purpose of the design or study,
2. Identification of project team members and roles,
3. Summary of the main features of the design or study,
4. Pertinent background information and summary of previous studies, including geological and geotechnical studies and investigations, if appropriate,
5. Summary of appropriate loading conditions,
6. Assumptions, criteria, and procedures used in performing the design or study,
7. Summary of analytical results,
8. Design or study challenges,
9. Summary of findings,
10. Conclusions and recommendations, and
11. Other pertinent information.

In addition, the discussion at the initial meeting shall define the scope of the independent third-party review, establish a proposed project and review schedule, and establish lines of communication and authority between the review participants.

The initial meeting shall be held in the offices of the SEO in Denver, unless otherwise approved by the SEO.

#### **4.5 Additional Meetings**

Additional meetings may be held as necessary to review the progress of the independent third-party review or to discuss concerns identified by the reviewer(s). These meetings will generally be coordinated and conducted by the independent third-party reviewer(s).

Pertinent conclusions and recommendations of the meetings shall be prepared in writing by the third-party reviewer(s) and submitted to the SEO.

#### **4.6 Final Report**

The independent third-party reviewer(s) shall summarize the results of their review and recommendations in a final report. The report shall include:

1. The scope of the independent third-party review, including a summary of the items reviewed or not reviewed in checklist fashion,
2. The design review process, including the reasons for and results of any independent analyses,
3. Any design deficiencies identified by the reviewer(s),

4. A discussion of any information that, if it had been included, would have facilitated the review or minimized the need for independent analyses,
5. Verification of the adequacy of the final design submittal in accordance with Rules 5 and 6 of Rules and Regulations for Dam Safety and Dam Construction,
6. A list of incidental discrepancies identified in the engineering documents, and
7. Conclusions and recommendations of the reviewer(s) pertaining to acceptance and approval by the State Engineer.

The report shall be signed and sealed with the reviewer's Professional Engineer stamp, and three copies of the stamped report shall be submitted to the SEO. The final report shall be addressed to the SEO design review manager with copies to the other parties, as appropriate.

#### **4.7 Final Presentation**

Within 60 days after issuance of the independent third-party review report, but no sooner than 30 days after issuance of the report, unless otherwise approved by the SEO, the independent third-party reviewer(s) shall present the results of their review and recommendations in a review summary meeting. In this review meeting, the third-party reviewer shall discuss:

1. The scope of the review, including a summary of the items reviewed or not reviewed,
2. A summary of the assumptions, procedures, analysis methods, results, and conclusions of pertinent analyses,
3. The reasons for and results of any independent analyses,
4. Any design deficiencies identified in the review and how these deficiencies were addressed by the party responsible for the design or study,
5. Key design features, details, or provisions of the design,
6. Specialized construction techniques, methods, or constraints to be employed, and
7. The conclusions and recommendations of the reviewer(s) recommending approval or denial of the design or study by the SEO.

The dam owner, the party(ies) responsible for the design or study, the independent third-party reviewer(s), and representatives of the SEO shall attend this meeting. The third-party reviewer(s) shall be responsible for coordinating and conducting the meeting. This meeting shall be held in the offices of the SEO in Denver, unless otherwise approved by the SEO.

#### **4.8 SEO Approval**

The State Engineer will respond to the dam owner within 30 days after the date of the review summary meeting, stating whether the results and conclusions of the independent third-party review are accepted, not accepted, or if additional information is required.

### **5.0 PROCEDURES FOR PERFORMING INDEPENDENT THIRD-PARTY CONSTRUCTION INSPECTIONS**

When utilizing the independent third-party review option to potentially accelerate a project's acceptance by the SEO, the SEO Dam Safety Branch's construction inspection schedule may be adversely impacted. In order to accommodate the construction inspection requirements of the project, the SEO may require the independent third-party reviewer to conduct or participate in some or all construction inspections for the project that otherwise would have been performed by the SEO. Similar to the independent design review, the dam owner will be responsible for all costs associated with the independent third-party reviewer's construction inspections.

The actual scope of the independent third-party review for construction inspection services will be defined by the SEO on a case-by-case basis, depending on the project features, construction schedule, and SEO schedule. Possible construction inspection services to be performed by the independent third-party review may include:

1. Participate in pre-construction meeting,
2. Review of Construction Observation Plans,
3. Perform inspections at major milestones of construction,
4. Review change orders and provide recommendations to SEO for approval of change orders,
5. Review project construction reports,
6. Prepare of construction inspection reports and photos,
7. Review design modifications during construction and provide, recommendations to SEO for approval,
8. Participate in final construction inspection, and
9. Review "As-Constructed" drawings and other project completion documents.



## **6.0 CONCLUSIONS**

This policy memorandum sets forth the standards and procedures for requesting and performing an independent third-party review for engineering documents submitted to the SEO as described above. These standards and procedures are intended to establish consistent guidelines, set forth minimum qualifications, and provide an understanding of the proper use of the independent third-party reviews.

The SEO reserves the right to alter the use, procedures, and requirements of the independent third-party review process as necessary to meet the goals of the Dam Safety Branch.

The use of the independent third-party review is an optional method for the review of engineering documents submitted to the SEO, as approved by the SEO. As such, the dam owner chooses voluntarily to utilize this option and is not required by the SEO to use this process.